ADEQ Inventory No. 100508 Permit No AZ0024597

AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Clean Water Act, as amended, (33 U.S.C. § 1251 et seq, the "Act"),

ASARCO Incorporated - Mission Complex
4201 West Pima Mine Road
Sahuarita, AZ 85629

is authorized to discharge from the following discharge points at the Mission Complex to unnamed ephemeral tributaries of the Santa Cruz River:

Outfall Serial No.	**Description of discharge**	**Location of discharge**
Outfall 001A	runoff from roadway next to San Xavier Oxide dump	Latitude: 32° 1' 30" N Longitude: 111° 4' 30" W
Outfall 002D	runoff from Tailings No. 2, 3, and North Dump	Latitude: 32° 1' 45" N Longitude: 111° 1' 0" W
Outfall 006L	runoff from San Xavier Dump	Latitude: 32° 2' 30" N Longitude: 111° 4 ' 30" W

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein, and in the attached EPA Region 9 "Standard Federal NPDES Permit Conditions," dated June 3, 2002.

This permit shall become effective on

This permit and the authorization to discharge shall expire at midnight:_____

Signed this ___ day of _____ 2003.

For the Regional Administrator

Catherine Kuhlman, Acting Director

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A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. Asarco Mission Complex ("Permittee") is authorized to discharge stormwater and mine drainage from Outfalls 001A, 002D, and 006L as described below. The following limitations are subject to the compliance schedule set forth in Part E of this Permit.

a. Discharges resulting from storm events less than the 100-year 24-hour storm event from Outfalls 002D and 006L are prohibited;

b. Discharge shall be limited and monitored by the Permittee as specified below. All metals limits below are for total recoverable metals as specified in Methods for Chemical Analysis of Water and Wastes (EPA 600/4-79-020) method 4.1.4.

Effluent Characteristic	**Concentration limits**	**Monitoring Requirements**	
	Daily Maximum mg/l	Monitoring Frequency	Sample Type
Flow (MGD) (1)	(2)	Daily	Estimate
Copper (total recoverable)	0.086	Quarterly (3)	Discrete
Lead (total recoverable)	0.015	Quarterly (3)	Discrete
Zinc (total recoverable)	3.6	Quarterly (3)	Discrete
pH	Not less than 6.5 standard units nor greater than 9.0 standard units.	Quarterly (3)	Discrete

Footnotes

(1) MGD = Million gallons per day.

(2) No limit set for Flow.

(3) The measuring frequency and sample type for intermittent flows from all outfalls shall consist of grab samples resulting from a discharge event that is greater than 0.1 inches in magnitude during the first hour of the discharge.

c. Monitoring Requirements

i. The Permittee shall conduct additional monitoring of discharges as specified below.

Effluent Characteristic (1)	Monitoring Requirements (1)	
	Monitoring Frequency	Sample Type
Total Suspended Solids	Quarterly (2)	Discrete
Chemical Oxygen Demand	Quarterly (2)	Discrete
Nitrogen as Nitrate plus Nitrite	Quarterly (2)	Discrete
Hardness	Quarterly(2)	Discrete
Turbidity	Quarterly (2)	Discrete
Arsenic (total recoverable)	Quarterly (2)	Discrete
Arsenic (dissolved)	Quarterly (2)	Discrete
Cadmium (total recoverable)	Quarterly(2)	Discrete
Cadmium (dissolved)	Quarterly (2)	Discrete
Copper (dissolved)	Quarterly (2)	Discrete
Iron (total recoverable)	Quarterly (2)	Discrete
Manganese (total recoverable)	Quarterly (2)	Discrete
Manganese (dissolved)	Quarterly (2)	Discrete
Mercury (total recoverable)	Quarterly (2)	Discrete
Mercury (dissolved)	Quarterly (2)	Discrete
Selenium (dissolved)	Quarterly (2)	Discrete
Zinc (dissolved)	Quarterly (2)	Discrete

Footnotes:

(1) No limit set at this time. A level that approaches or exceeds applicable surface water quality standards may trigger a re-evaluation of reasonable potential and the permit may be reopened and limitations placed in the permit.

(2) The measuring frequency and sample type for intermittent flows is described previously in the footnotes to Part A.1.b.

ii. The Permittee may petition EPA to remove or modify monitoring requirements after June 2006, when Asarco has fulfilled its obligations under the Findings of Violation and Order for Compliance issued by EPA on June 20, 2002.

B. OTHER LIMITATIONS AND REQUIREMENTS

1. The discharge shall be free from pollutants in amounts or combinations that in the receiving water:

   a. Settle to form bottom deposits that inhibit or prohibit the habitation, growth or propagation of aquatic life;

   b. cause objectionable odor in the area in which the surface water is located;

   c. cause off-taste or odor in drinking water;

   d. cause off-flavor in aquatic organisms;

   e. are toxic to humans, animals, plants or other organisms;

   f. cause the growth of algae or aquatic plants that inhibit or prohibit the habitation, growth or propagation of other aquatic life or that impair recreational uses;

   g. cause or contribute to a violation of an aquifer water quality standard prescribed in Arizona Administrative Code (A.A.C.) R18-11-405 or A.A.C. R18-11-406; or

   h. change the color of the surface water from natural background levels of color.

2. The discharge shall be free from oil, grease and other pollutants that float as debris, foam, or scum; or that cause a film or iridescent appearance on the surface of the water; or that cause a deposit on a shoreline, bank or aquatic vegetation.

C. BEST MANAGEMENT PRACTICES

1. The permittee shall prepare and submit for EPA's approval a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP shall include provisions for stormwater management such that all stormwater at the Mission Complex will be controlled through one of the following four methods:

   a. Stormwater run-off will be diverted through berms, channels, or dikes designed to convey the 100 year, 6 hour storm event to containment areas where no discharge of water occurs;

   b. Stormwater run-off will be diverted through berms, channels, or dikes designed to convey the 100 year, 6 hour storm event to sediment ponds designed to hold the 100 year 24 hour storm event;

   c. Stormwater run-on (generated from off-site) will be diverted around mining activities to prevent contact with areas disturbed by mining; or

d. Potential stormwater contaminants will be controlled at the source by capping, removing all exposed mineralized materials, or other reclamation and by stabilizing and protecting surface areas to effectively control erosion or leaching of contaminants.

Control of stormwater at the Mission Complex in these fashions must be accomplished by the dates set in the compliance schedule established in Part E of this permit.

2. The SWPPP shall contain the following minimum requirements that shall be submitted to the permitting authority within three months of permit issuance:

a. Site Description. The SWPPP shall include a general description of the site, process operations, hydrology, topography, potential receiving waters, a description of outfall locations and potentially contributing drainage areas to each outfall.

b. Potential pollution sources. The SWPPP shall include a description of each area of the mine site (e.g. mining/milling areas; access and haul roads; equipment storage; fueling and maintenance areas; ore piles; materials handling areas; outdoor manufacturing, storage, or material disposal areas; chemical and explosives storage areas; waste rock/overburden; topsoil storage areas; waste storage areas; tailings piles; tailings ponds; tailings conveyances) and its potential for pollutants to be present in significant amounts. Areas of the mine site shall be indicated on the site map.

Factors that shall be considered for determining potential pollution include: the mineralogy of the ore, waste rock and native soils; toxicity and quantity of chemicals used, produced or discharged in the area; likelihood of contact with stormwater; vegetation of site; stabilization of site; history of leaks or spills; and characterization data for acid generating materials.

c. Control of Runoff and Spills.

i. The SWPPP shall describe existing and planned diversion and containment structures for the control of mine drainage and stormwater combined with mine drainage such that no discharge occurs except during storm events larger than those described in Part C.1.

ii. The SWPPP shall contain a drainage basin assessment to determine the outline of each basin, and its BMP(s) and designated outfall, or termination (if controlled by evapotranspiration or infiltration). The SWPPP shall describe assumptions and methods used to determine the position of drainage divides and present this data on a site map. The method must include field verification. The SWPPP shall provide calculations that demonstrate the stormwater capacities for all retention basins at the site.

iii. The SWPPP shall include the BMPs utilized to contain spills, and may include BMPs such as grading a road so as to provide containment for spray originating from a failed

coupling. The SWPPP shall describe the drainage such that any spills of tailings will be directed to sediment ponds or fluid control structures designed to contain the 100 year 24 hour storm event, and the methods to be used to clean up spills. The location of contained process fluids and BMPs to control spills or leaks shall be shown on the map. These areas will be made accessible for regular inspections.

d. Stormwater diversions. The SWPPP shall indicate the location and the type of stormwater diversions and conveyances (e.g. dikes, swales, curbs, berms, pipe slope drains, subsurface drains, channels, gutters, rolling dips and road slopes) for all areas of the mine.

e. Stormwater containment controls. The SWPPP shall describe appropriate BMPs that will be use to control pollutants in stormwater discharges.

f. Site Map. The SWPPP shall include site maps that show all features required in the SWPPP, including potential pollution sources, conveyance structures, stormwater controls, mine features, tailings, drainage area boundary lines, outfall or termination points, stormwater monitoring points, and all features described in section C. 2. a-e, above.

3. The SWPPP shall contain the following minimum best management practices that shall be updated and maintained as necessary to control stormwater runoff and mine drainage as described in the SWPPP:

a. Pollution prevention team. The permittee must identify the staff and individuals (by name or title) that comprise the facility's stormwater pollution prevention team.

b. Maintenance of Containment Facilities

i. The Permittee shall monitor the available surge capacity and freeboard in the process impoundment and all stormwater basins designated as no-discharge quarterly and after rainfall events of over 3 inches in 24 hours. After storm events, the Permittee shall take measures as soon as practicable to restore the freeboard necessary in the impoundments to contain the design storm event. Such measures shall be continued by the Permittee until adequate freeboard is restored.

ii. The Permittee shall assess the siltation of the process ponds and all stormwater basins designated as no-discharge annually and after rainfall events of over 3 inches in 24 hours. The Permittee shall take action to remove solids when liquid storage capacity is less than 80% of the required design volume. The Permittee shall take measures to maintain the integrity of containment liners during removal of solids.

iii. The Permittee shall establish a maintenance program for pump stations, spare pumps, pipelines, containment structures and standby electrical generators to prevent a spill or discharge of tailings. The Permittee shall maintain records for pump station testing and equipment inspections.

iv. All areas adjacent to pipes transporting tailings and tailings return water will be bermed and/or graded to contain any spill or leak.

c. Stormwater source controls. The SWPPP shall include an assessment of areas where stormwater will be controlled at the source instead of diversion and containment. The SWPPP shall describe BMPs that will be used to stabilize and protect surface areas to effectively control erosion at the source. The BMPs shall, at a minimum, include:

i. Establishment of an effective, permanent vegetative cover at least equal in extent of cover to natural vegetation or that is necessary to achieve the approved post-mining use.

ii. Establishment of stable slopes to minimize sideslope erosion or gullies. BMPs for creating stable slopes include grading, berming, contour furrowing, limiting slope length, and creating stable slope shapes (concave slopes and complex slopes instead of convex and simple).

iii. Regulating channel velocity through diversions, grading, rip rap, or other permanent control measure to minimize erosion.

iv. Demonstration through monitoring that runoff from reclaimed lands meet all applicable surface quality standards.

d. Site Inspection and Maintenance. All BMPs identified in the SWPPP must be maintained in effective operating condition. The SWPPP shall include a procedure for routine inspection of stormwater diversions, stormwater controls, and sediment and erosion controls. The SWPPP shall include inspection and maintenance procedures for storage/containment ponds to assess available freeboard and surge capacity, maintenance of ponds, containment structures, pipelines, pump stations; and structural repair of berms, ditches, dikes, dams, etc.

i. The BMPs identified in the SWPPP must be inspected at least quarterly and after significant precipitation events.

ii. The SWPPP shall describe a method to implement repairs to facility deficiencies found during regular maintenance inspections at all stormwater facilities. If site inspections identify BMPs that are not operating effectively, maintenance must be performed before the next anticipated storm event, or as necessary to maintain the continued effectiveness of stormwater controls. If maintenance prior to the next anticipated storm event is impracticable, maintenance must be scheduled and accomplished as soon as practicable.

e. Employee Training. The SWPPP shall include a description of employee training, to be conducted at least annually. The SWPPP shall include a description of employee contacts and responsibilities for each component of the SWPPP.

f. Endangered Species. The permittee shall follow protocols established with the Fish and Wildlife Service for mitigation when construction and maintenance activities related to the SWPPP affect endangered species.

4. The Permittee shall maintain the SWPPP, all logs, inspection and maintenance reports on file at the facility for three years where they shall be available for inspection.

5. The Permittee shall implement the SWPPP as described.

D. GENERAL MONITORING AND REPORTING

1. Reporting of Monitoring Results

a. The permittee shall report monitoring results on EPA Discharge Monitoring Report (DMR) forms, to the extent that the results reported may be entered on the forms. The permittee shall submit results of all monitoring required by this permit in a format that will allow direct comparison with the limitations and requirements of this permit. Discharge flows shall be reported in terms of the date, time and duration of the discharge. If no discharge occurs during the reporting period, the permittee shall specify "No discharge"on the DMR.

The permittee shall submit DMRs by the 28th day of the month following the end of any given monitoring period. For example, if the monitoring period ends January 31st, the permittee shall submit the DMR by February 28. The permittee shall submit original copies of these and all other reports required herein, signed by an authorized representative, to EPA at the following addresses:

U.S. Environmental Protection Agency, Region IX
DMR/NPDES Mailcode: WTR-7
75 Hawthorne Street
San Francisco, CA 94105

A copy of all DMRs shall be sent to the following address:

Arizona Department of Environmental Quality
Water Quality Compliance Section
Data Unit, Mailcode: 5415B-1
1110 W. Washington Street
Phoenix, AZ 85007

b. Sample collection will be performed in accordance with the preservation and handling, preparation and analysis of samples as described in the most recent edition of 40 CFR 136.3, unless otherwise specified in this permit. For effluent analyses, the Permittee shall utilize an analytical method with the published Method Detection Limit (MDL,

as defined in section Appendix A of this permit) that is lower than the effluent limitations (or lower than the water quality criteria). If all published MDLs are higher than effluent limitations or water quality criteria concentrations, the Permittee shall utilize the EPA-approved analytical method with the lowest published MDL. In accordance with 40 CFR 122.45(c), effluent analyses for metals shall measure "total recoverable metals" except where otherwise specified in this permit.

c. For the purposes of reporting, the Permittee shall use the reporting threshold equivalent to the laboratory's MDL. As such the Permittee or its laboratory must utilize a standard calibration where the lowest standard point is equal to or less than the Minimum Level (ML), as defined in section Appendix A of this permit.

For analytical results between the laboratory's MDL and the ML, the Permittee shall report No Discharge/No Data (Not Quantifiable) ["NODI(Q)"] on the DMR form. Analytical results below the laboratory's MDL shall be reported as No Discharge/No Data (Below Detection Level) ["NODI(B)"].

As an attachment to the first DMR form submitted following the effective date of this permit, and at any time thereafter that the following information should change, the Permittee shall report the following: the analytical result; the analytical method number or title, preparation and analytical procedure, and published MDL; the laboratory MDL, standard deviation (S) from the laboratory's MDL study (see 40 CFR Part 136, Appendix B), and the number of replicate analyses used to compute the laboratory's MDL (n); and ML.

d. Quality Assurance Manual

Sample collection will be performed as stated in the Quality Assurance (QA) Manual/QA Plan.

The Permittee shall develop a QA Manual/QA Plan for collection and analysis of samples. If the water samples are analyzed by an independent laboratory, the Permittee shall ensure that the laboratory has a QA Manual.

The purpose of the QA Manual is to assist in planning for the collection and analysis of samples and explaining data anomalies if they occur. As appropriate and applicable, the QA Manual shall include the details enumerated below. The QA Manual shall be retained on the Permittee's premises and be available for review by EPA. The Permittee or the independent laboratory as the case may be shall review its QA Manual annually and revise it when appropriate. Throughout all field sampling and laboratory analyses, the Permittee or the laboratory shall use quality assurance/quality control (QA/QC) procedures as documented in its QA Manual.

i. Project Management, including roles and responsibilities of the participants; purpose of sample collection; matrix to be sampled; the analytes or compounds being measured; applicable technical, regulatory, or program-specific action criteria; personnel qualification requirements for collecting samples.

ii. Sample collection procedures; equipment used; the type and number of samples to be collected including QA/QC samples (i.e., background samples, duplicates, and equipment or field blanks); preservatives and holding times for the samples (see 40 CFR 136.3); and chain of custody procedures.

iii. Identification of the laboratory to be used to analyze the samples; provisions for any proficiency demonstration that will be required by the laboratory before or after contract award such as passing a performance evaluation sample; analytical method to be used; Method Detection Limit and Minimum Level to be reported; required QC results to be reported (e.g., matrix spike recoveries, duplicate relative percent differences, blank contamination, laboratory control sample recoveries, surrogate spike recoveries, etc.) and acceptance criteria; and corrective actions to be taken by the Permittee or the laboratory as a result of problems identified during QC checks.

iv. Discussion of how the Permittee will perform data review and requirements for reporting of results to EPA to include resolving of data quality issues and identifying limitations on the use of the data.

2. Monitoring and Records

Records of monitoring information shall include:

a. Date, exact location, and time of sampling or measurements performed, and preservatives used;

b. Individual(s) who performed the sampling or measurements;

c. Date(s) analyses performed;

d. Laboratory(s) which performed the analyses;

e. Analytical techniques or methods used;

f. Any comments, case narrative or summary of results produced by the laboratory. These should identify and discuss QA/QC analyses performed concurrently during sample analyses and should specify whether they met project and 40 CFR Part 136 requirements. The summary of results must include information on initial and continuing calibration, surrogate analyses, blanks, duplicates, laboratory control samples, matrix spike and matrix spike duplicate results, sample receipt condition, holding times, and preservation;

g. Summary of data interpretation and any corrective action taken by the Permittee; and

h. Effluent limitations for analytes/compound being analyzed.

3. Twenty-Four Hour Reporting of Noncompliance

The Permittee shall report any noncompliance which may endanger human health or the environment. This information shall be provided orally within 24 hours from the time the Permittee becomes aware of the noncompliance to the following person or their office:

CWA Compliance Office Chief
USEPA
(415) 972-3505

Water Quality Compliance Section Manager
ADEQ
(602) 771- 4567

A written submission shall also be provided within 5 days of the time the Permittee becomes aware of the noncompliance. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including dates and times, and, if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

4. Intermittent Discharge Monitoring

The measuring frequency and sample type for intermittent flows from all outfalls shall consist of one discrete sample during the first hour of discharge, after which the frequencies of analysis listed in the monitoring requirements shall apply for the duration of each such intermittent discharge.

5. For the purposes of this permit, the gauge station used to monitor rainfall shall be that operated by the National Weather Service or the National Oceanographic and Atmospheric Administration nearest to the facility. The Permittee may establish a gauge station at the facility, in which case rainfall shall be recorded on a daily basis. A National Weather Service Standard Rain Gauge shall be used.

E. SPECIAL CONDITIONS

1. COMPLIANCE SCHEDULE

Pursuant to Compliance Order No. CWA 402-9-02-31, the Permittee is developing a Work Plan to implement the requirements of the Compliance Order and this permit. The Work Plan establishes a schedule to implement the construction and maintenance activities necessary to provide the stormwater containment and control mandated by this permit and the Order. Some of these activities require additional federal or state permits or approvals prior to construction.

In recognition of the time necessary to obtain permits and complete construction, compliance with Part A.1.a, A.1.b, and C.1 of this permit is deferred until the dates established in Attachment 2 to this permit.

2. REOPENER

This permit may be modified per the provisions of 40 CFR Part 122 and 124. This permit may be reopened based on newly available information; to add conditions or limits to address demonstrated effluent toxicity; to implement any EPA-approved new Arizona water quality standard; or to re-evaluate reasonable potential (RP), if Action Levels in this permit are exceeded.

APPENDIX A: DEFINITIONS

1. A "discrete" or "grab" sample means any individual sample collected in less than 15 minutes.

2. The "daily maximum" concentration means the measurement made on any single discrete sample or composite sample.

3. The "Method Detection Limit (MDL)" is the minimum concentration of an analyte that can be detected with 99% confidence that the analyte concentration is greater than zero, as defined by the specific laboratory method listed in 40 CFR Part 136. The procedure for determination of a laboratory MDL is in 40 CFR Part 136, Appendix B.

4. The "Minimum Level (ML)" is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all of the method-specified sample weights, volumes, and processing steps have been followed (as defined in EPA's draft National Guidance for the Permitting, Monitoring, and Enforcement of Water Quality-Based Effluent Limitations Set Below Analytical Detection/Quantitative Levels, March 22, 1994). Promulgated method-specific MLs are contained in 40 CFR Part 136, Appendix A and must be utilized if available. If a promulgated method-specific ML is not available, then an interim ML shall be calculated. The interim ML is equal to 3.18 times the promulgated method-specific MDL rounded to the nearest multiple of 1, 2, 5, 10, 20, 50, etc.

   When neither an ML nor an MDL are available under 40 CFR Part 136, an interim ML should be calculated by multiplying the best estimate of detection by a factor of 3.18; when a range of detection is given, the lower end value of the range of detection should be used to calculate the ML. At this point in the calculation, a different procedure is used for metals than for non-metals:

   a. For metals: due to laboratory calibration practices, calculated MLs for metals may be rounded to the nearest whole number.

   b. For non-metals: because analytical instruments are generally calibrated using the ML

as the lowest calibration standard, the calculated ML is then rounded to the nearest multiple of (1, 2, or 5) x 10^n, where *n* is zero or an integer. (For example: if an MDL is 2.5 µg/L, then the calculated ML is: 2.5 µg/L x 3.18 = 7.95 µg/L. The multiple of (1, 2, or 5) x 10^n nearest to 7.95 is 1 x 10^1 = 10 µg/L, so the calculated ML (rounded to the nearest whole number) is 10 µg/L.)

5. A "continuous discharge" means a discharge which occurs without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or other similar activities.

6. An "intermittent discharge" means a discharge which occurs with interruption during the operating hours of the facility.

7. An "unauthorized discharge" means a discharge to Waters of the United States not allowed or authorized under the Clean Water Act.